(d) Is likely to produce an advanced automobile propulsion system suitable for steps toward technology transfer to mass production in a shorter time period than would otherwise occur;

(e) Is not technologically the same as efforts by any person conducted previously or to be conducted during the annual funding period regarding a substantially similar advanced automobile propulsion system; and

(f) Is not likely to result in a decrease in the level of private resources expended on advanced automotive research and development by substituting Federal funds without justification.

PART 474—ELECTRIC AND HYBRID VEHICLE RESEARCH, DEVELOPMENT AND DEMONSTRATION PROGRAM; EQUIVALENT PETROLEUM-BASED FUEL ECONOMY CALCULATION

Sec.
474.1   Purpose and scope.
474.2   Definitions.
474.3   Test procedures.
474.4   Equivalent petroleum-based fuel economy calculation.

§ 474.1   Purpose and scope.

This part contains procedures for calculating the equivalent petroleum-based fuel economy value of electric vehicles, as required to be prescribed by the Secretary of Energy under section 503(a)(3) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2003(a)(3)), as added by section 18 of the Chrysler Corporation Loan Guarantee Act of 1979. The equivalent petroleum-based fuel economy value is intended to be used in calculating corporate average fuel economy pursuant to regulations promulgated by the Environmental Protection Agency at 40 CFR Part 600—Fuel Economy of Motor Vehicles.

§ 474.2   Definitions.

For purposes of this part, the term—
Electric vehicle means a vehicle that is powered by an electric motor drawing current from rechargeable storage batteries or other portable energy storage devices. Recharge energy shall be drawn primarily from a source off the vehicle, such as residential electric service.

Electrical efficiency value means the weighted average of the stop-and-go and steady-speed electrical efficiency values, as determined in accordance with § 474.4(b).

Energy equivalent fuel economy value means the electrical efficiency value converted into units of miles per gallon, as determined in accordance with § 474.4(c).

Equivalent petroleum-based fuel economy value means a number, determined in accordance with § 474.4, which represents the average number of miles travelled by an electric vehicle per gallon of gasoline.

Model type means the term defined by the Environmental Protection Agency in its regulations at 40 CFR 600.002–81(19).

Model year means the term defined by the Environmental Protection Agency in its regulations at 40 CFR 600.002–81(6).

Petroleum equivalency factor means a number which represents the parameters listed in section 503(a)(3)(ii) through (iv) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2003(a)(3)) for purposes of calculating equivalent petroleum-based fuel economy in accordance with § 474.4.

Petroleum-powered accessory means a heater/defroster system or an air conditioner system which uses fuel, as defined in section 501(5) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2001) as its primary energy source.

Production volume means the term defined by the Environmental Protection Agency in its regulations at 40 CFR 600.002–81(32).

Steady-speed electrical efficiency value means the average number of kilowatt-hours of electrical energy required for an electric vehicle to travel 1 mile, as determined in accordance with § 474.3(c).

Stop-and-go electrical efficiency value means the average number of kilowatt-hours of electrical energy required for an electric vehicle to travel 1 mile, as determined in accordance with § 474.3(b).

[46 FR 22753, Apr. 21, 1981, as amended at 48 FR 28432, June 22, 1983]

§ 474.3　Test procedures.

(a) The conditions and equipment in the Electric Vehicle Test Procedure—SAE J227a of the Society of Automotive Engineers shall be used for conducting the test procedures set forth in this section.

(b) The test procedures prescribed in SAE procedure J227a, Vehicle Energy Economy, using Vehicle Test Cycle C for the driving cycle, shall be used for generation of the stop-and-go electrical efficiency value.

(c) The test procedures prescribed in SAE procedure J227a, Vehicle Energy Economy, using a driving cycle consisting of a maximum cruise speed of 54 mph, as prescribed in the SAE procedure for Range at Steady Speed, shall be used for generation of the steady-speed electrical value. For an electric vehicle model type that is incapable of maintaining a maximum cruise speed of 54 mph, this test procedure shall be conducted at the maximum cruise speed as defined in section 2.8 of the SAE procedure J227a.

§ 474.4　Equivalent petroleum-based fuel economy calculation.

(a) Calculate the equivalent petroleum-based fuel economy of an electric vehicle as follows:

(1) Determine the stop-and-go electrical efficiency value, according to § 474.3(b).

(2) Determine the steady-speed electrical efficiency value, according to § 474.3(c).

(b) Calculate the electrical efficiency value by:

(1) Multiplying the stop-and-go electrical efficiency value by 0.91;

(2) Multiplying the steady-speed electrical efficiency value by 0.09; and

(3) Adding the resulting two figures, rounding to the nearest 0.01 kWh/mile.

(c) Calculate the energy equivalent fuel economy value by dividing the electrical efficiency value into 36.66.

(d) For purposes of paragraph (e) of this section, use the appropriate Petroleum Equivalency Factor as follows:

(1) If no more than 33 percent of the production volume of the electric vehicle model type is to be equipped with any petroleum-powered accessories, use the first number listed under paragraph (e) of this section for the applicable model year.

(2) If more than 33 percent of the production volume of the electric vehicle model type is to be equipped with only one petroleum-powered accessory, use the second number under paragraph (e) of this section of the applicable model year.

(3) If more than 33 percent of the production volume of the electric vehicle model type is to be equipped with two petroleum-powered accessories, use the third number under § 474.4(e) for the applicable model year.

(e) Calculate the equivalent petroleum-based fuel economy value in miles per gallon by multiplying the energy equivalent fuel economy value by the appropriate petroleum equivalency factor for the model year in which the electric vehicle is manufactured.

(1) For model year 1981, the petroleum equivalency factor is:

(i) 1.9,

(ii) 1.7, or

(iii) 1.6;

(2) For model year 1982, the petroleum equivalency factor is:

(i) 2.0,

(ii) 1.8, or

(iii) 1.6;

(3) For model year 1983, the petroleum equivalency factor is:

(i) 2.0,

(ii) 1.8, or

(iii) 1.6;

(4) For model year 1984, the petroleum equivalency factor is:

(i) 2.1,

(ii) 1.9, or

(iii) 1.7;

(5) For model year 1985, the petroleum equivalency factor is:

(i) 2.3,

(ii) 2.0, or

(iii) 1.8;

(6) For model year 1986, the petroleum equivalency factor is:

(i) 2.2,

(ii) 2.0, or